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The Mineral Industry of Italy

UNITED STATES DEPARTMENT OF THE INTERIOR

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The Mineral Industry of Italy

By John G. Panulas[1]

Italy's mining activities accounted for an estimated 5% of the country's 1987 gross national product of about $670 billion.[2] Italy continued to be a major producer of pumice and feldspar. Output of asbestos, barite, bentonite, cement, fluorspar, magnesite, potash, and talc were also of world importance.

Ente Nazionale Idrocarburi (ENI), Italy's state mining organization, continued reorganization of its subsidiary Società per Azioni Minero-Metallurgiche (SAMIM). The mining operations of SAMIM were moved to Società Italiana Minière, a subsidiary of Azienda Generali Italiana Petroli-Minière S.p.A. (AGIP Minière). Smelting and metallurgical activities were transferred to SAMIM's successor company, Nuova Società per Azioni Minero-Metallurgiche.

PRODUCTION

The Italian mining industry posted negligible growth in 1987. Production of metallic minerals grew very slightly. Smelter and refinery production of most metals either remained constant or fell somewhat. Output of industrial minerals, although significant to the extractive sector, showed little growth. Likewise, industrial mineral products posted only slight gains. In general, petroleum and natural gas sustained their previous output levels.

Table 1.—Italy: Production of mineral commodities[1]

(Metric tons unless otherwise specified)

Commodity	1983	1984	1985	1986[p]	1987[e]
METALS					
Aluminum:					
Bauxite	13,100				
Alumina	465,671	607,274	555,319	618,374	[3]699,635
Metal:					
Primary	195,694	230,207	221,055	242,632	[3]228,230
Secondary	278,000	283,000	282,000	[e]280,000	280,000
Antimony:					
Mine output, Sb content	--	244	495	305	300
Metal, total	720	1,121	1,039	715	700
Bismuth metal	23	26	54	66	70
Cadmium metal, smelter	385	452	526	411	[3]325
Copper:					
Mine output, Cu content	1,538	875	130	--	--
Metal, refined, all kinds	31,200	50,300	64,300	64,800	65,000

See footnotes at end of table.

Table 1.—Italy: Production of mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Commodity	1983	1984	1985	1986[p]	1987[e]
METALS —Continued					
Iron and steel: Metal:					
Pig iron thousand tons	10,341	11,628	11,658	11,898	[2]10,400
Ferroalloys:					
Blast furnace:					
Ferromanganese	50,274	36,092	50,111	48,002	50,000
Spiegeleisen	494	935	1,001	1,151	1,200
Silicon pig iron (10%-12% Si)	580	342	686	968	1,000
Electric furnace:					
Ferrochromium	45,414	49,942	57,654	55,939	56,000
Ferromanganese	12,647	15,651	17,166	11,653	12,000
Ferrosilicon	51,913	71,157	75,302	62,799	63,000
Silicomanganese	37,244	72,779	64,858	66,083	67,000
Silicon metal	11,737	22,812	17,812	968	1,000
Other	42,219	50,755	15,862	14,022	14,000
Total	252,522	320,465	300,452	261,585	265,200
Steel, crude thousand tons	21,674	24,061	23,744	22,869	22,900
Semimanufactures:					
Wire rod do.	2,027	2,027	2,256	[e]2,000	2,000
Sections do.	6,874	6,874	7,135	[e]7,000	7,000
Plates and sheets do.	8,409	5,836	5,062	[e]5,000	5,000
Hoop and strip do.	461	461	526	[e]500	500
Railway track material do.	234	234	280	[e]200	200
Ingots, semimanufactures, solids for tubes do.	957	948	1,198	[e]1,100	1,100
Castings and forgings do.	453	435	326	[e]300	300
Other do.	1,515	1,524	1,383	[e]1,500	1,500
Total do.	20,930	18,339	18,166	[e]17,600	17,600
Lead:					
Mine output, Pb content	23,561	20,893	15,622	11,119	[2]19,284
Metal, refined:					
Primary	36,955	37,558	29,538	29,333	66,000
Secondary	89,400	102,900	96,700	101,700	94,000
Magnesium:					
Mine output, Mg content	9,781	9,300	9,831	9,046	9,500
Metal, primary	7,687	7,491	7,863	12,417	[2]7,173
Manganese, mine output:					
Gross weight	7,205	9,582	8,621	6,396	3,400
Mn content	2,215	2,858	2,586	1,689	1,000
Silver metal thousand troy ounces	2,361	1,554	2,301	1,813	[2]2,668
Zinc:					
Mine output, Zn content	42,944	42,288	45,438	26,303	26,000
Metal, primary	155,893	169,672	215,644	229,397	230,000
INDUSTRIAL MINERALS					
Asbestos	139,054	147,272	136,606	115,208	115,000
Barite	139,090	107,128	128,356	114,132	115,000
Bromine[e]	500	500	600	450	520
Cement, hydraulic thousand tons	39,216	37,782	36,677	35,340	[2]36,200
Clays, crude:					
Bentonite do.	297	309	304	300	[2]313
Refractory excluding kaolinitic earth do.	284	332	400	381	[2]375
Fuller's earth do.	20	30	30	31	30
Kaolin do.	53	53	60	35	[2]125
Kaolinitic earth do.	25	25	26	21	22
Diatomite[e]	25,000	28,000	30,000	27,000	27,000
Feldspar	826,856	985,573	1,115,575	1,237,058	[2]1,173,663
Fluorspar:					
Acid-grade	102,910	116,330	95,450	90,900	[2]80,300
Metallurgical-grade	74,760	77,931	56,762	54,536	[2]56,600
Total	177,670	188,261	152,212	145,436	[2]136,900
Graphite, all grades	2,299				
Gypsum thousand tons	1,388	1,264	1,261	[e]1,300	[2]1,233
Lime, hydrated and quicklime do.	2,021	2,402	2,276	[e]2,100	2,300
Nitrogen: N content of ammonia do.	1,060	1,210	1,217	[e]1,200	1,200
Perlite[e]	75,000	80,000	80,000	70,000	70,000
Pigments, mineral: Iron oxides, natural[e]	900	800	850	875	900
Potash, crude salts:					
Gross weight thousand tons	1,674	1,481	1,701	1,261	[2]1,401
K_2O equivalent do.	184	162	205	158	[2]168

See footnotes at end of table.

Table 1.—Italy: Production of mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Commodity	1983	1984	1985	1986[p]	1987[e]
INDUSTRIAL MINERALS —Continued					
Pumice and related materials:					
Pumice and pumiceous lapilli thousand tons	931	903	e750	e700	2725
Pozzolan do	5,590	5,712	e5,000	e4,500	5,000
Pyrites, all types, gross weight do	646	443	690	761	770
Salt:					
Marine, crude[3] do	736	723	570	574	2571
Rock and brine do	3,454	3,255	3,176	3,433	3,500
Sand and gravel:					
Volcanic sand do	110	115	e110	e100	100
Silica sand do	4,085	4,415	e4,400	e4,200	4,300
Other sand and gravel do	124,000	120,694	e122,000	e123,000	122,000
Sodium and potassium compounds:[e]					
Caustic soda	9,000	8,000	8,500	8,700	8,700
Sodium carbonate thousand tons	855	90	90	80	2,85
Sodium sulfate do	90	80	80	75	80
Stone:					
Dimension:[4]					
Calcareous:					
Alabaster and onyx do	20	17	e20	e20	20
Marble in blocks:					
White do	2,256	1,777	e1,500	e1,600	1,600
Colored do	1,785	1,756	e1,800	e1,800	1,800
Schist (calcareous) do	496	510	e500	e500	500
Travertine do	1,075	1,066	e1,100	e1,100	1,100
Tufa do	4,521	5,207	e5,000	e4,500	4,500
Other:					
Gneiss do	259	319	e300	e300	300
Granite do	2,556	2,385	e2,500	e2,500	2,500
Lava, basalt, trachyte do	6,879	8,799	e7,000	e8,000	8,000
Porphyry do	1,226	1,205	e1,200	e1,200	1,200
Sandstone do	1,781	1,855	e1,800	e1,800	1,800
Slate do	119	124	e120	e120	120
Tuff, volcanic do	5,826	5,930	e5,900	e5,800	5,800
Crushed and broken:					
Dolomite do	849	887	e900	e850	850
Limestone do	120,000	117,025	e120,000	e110,000	110,000
Marl for cement do	11,653	11,502	11,458	10,574	11,000
Serpentine do	2,339	1,204	e1,500	e1,500	1,500
Quartz and quartzite do	266	316	e300	e250	250
Strontium minerals: Celestite	414	--	4,611	4,667	177
Sulfur:					
Gross weight of ore thousand tons	41	20	5	--	--
Recovered as elemental and in compounds:					
Elemental from ore do	9	8	1	--	--
S content of pyrites do	271	192	280	309	300
Byproduct, oil refining[e] do	10	10	10	10	10
Byproduct, other sources[e] do	200	190	190	175	180
Total do	490	400	481	494	490
Talc and related materials	158,974	142,727	129,614	151,206	148,028
MINERAL FUELS AND RELATED MATERIALS					
Asphalt and bituminous rock, natural	93,306	91,988	88,700	65,889	66,000
Carbon black[e]	150,000	160,000	150,000	155,000	156,000
Coal:					
Lignite thousand tons	1,737	1,806	1,892	1,573	1,600
Subbituminous (Sulcis coal)	4,458	8,112	18,773	13,708	13,700
Coke, metallurgical thousand tons	6,419	6,920	7,377	e7,000	8,000
Gas, natural: Marketed million cubic feet	458,930	488,650	503,058	563,735	564,000
Natural gas liquids thousand 42-gallon barrels	383	383	360	e400	400
Petroleum:					
Crude do	14,961	15,635	16,024	17,230	17,000
Refinery products:					
Liquefied petroleum gas do	22,132	21,286	19,964	e20,000	20,000
Gasoline, all kinds do	125,732	123,522	124,617	e120,000	120,000
Naphtha do	24,269	22,876	27,175	e25,000	25,000
Jet fuel do	7,880	8,664	9,400	e9,000	9,000
Kerosene do	18,933	18,514	17,042	e18,000	18,000
Distillate fuel oil do	172,288	171,557	169,499	e170,000	170,000
Residual fuel oil do	190,32-	173,4e6	146,087	e150,000	150,000

See footnotes at end of table.

Table 1.—Italy: Production of mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Commodity	1983	1984	1985	1986[p]	1987[e]
MINERAL FUELS AND RELATED MATERIALS —Continued					
Petroleum —Continued					
Refinery products —Continued					
Other thousand 42-gallon barrels	41,300	40,957	43,988	[e]40,000	40,000
Refinery fuel and losses do	46,167	48,631	36,735	[e]45,000	45,000
Total do	649,023	629,473	594,507	[e]597,000	597,000

[e]Estimated. [p]Preliminary.
[1]Table includes data available through Sept. 22, 1988.
[2]Reported figure.
[3]Reported production from Sardinia and Sicily estimated at 200,000 tons annually.
[4]Output of limestone and serpentine for dimension stone use is included with "Stone: Crushed and broken."

TRADE

In metalliferous ore trade with the world, Italy's losses increased from $332 million in 1985 to $388 million in 1986, while the outflow resulting from its transactions in industrial minerals decreased from $1.5 billion to $1.4 billion. Correspondingly, in trade with its partners within the European Economic Community (EEC), Italy's commerce in metalliferous ores produced a deficit of $174 million, up $63 million from that of 1985. But industrial minerals sales to the EEC resulted in a deficit reduction of $106 million, down from $693 million in 1985 to $587 million in 1986. Notably in 1986, the country enjoyed surpluses of $2.4 billion and $921 million in its trade of industrial mineral products with the world and the EEC, respectively.

Table 2.—Italy: Exports of mineral commodities[1]

(Metric tons unless otherwise specified)

Commodity	1985	1986	Destinations, 1986	
			United States	Other (principal)
METALS				
Alkali and alkaline-earth metals:				
Alkali metals	495	302	--	Iraq 104; France 67; Switzerland 59.
Alkaline-earth metals	4	25	[2]	Belgium-Luxembourg 13; Switzerland 12.
Aluminum:				
Ore and concentrate	7,273	4,502	--	Turkey 3,592; Tunisia 600; Greece 159.
Oxides and hydroxides	283,421	338,359	166	Netherlands 118,700; Yugoslavia 66,451; Norway 35,932.
Ash and residue containing aluminum	7,373	6,973	--	West Germany 3,754; France 1,907; Belgium-Luxembourg 1,132.
Metal including alloys:				
Scrap	5,816	4,239	21	West Germany 2,866; France 931; Belgium-Luxembourg 166.
Unwrought	43,797	34,307	187	West Germany 11,653; France 6,561; Netherlands 4,248.
Semimanufactures	134,664	138,516	8,191	West Germany 41,582; France 24,866; United Kingdom 10,409.
Antimony:				
Ore and concentrate	582	30	--	NA.
Oxides	362	115	--	West Germany 82; United Kingdom 10; Switzerland 5.
Metal including alloys, all forms	1	24	--	Belgium-Luxembourg 19; France 2; Spain 2.
Arsenic: Oxides and acids	24	17	--	Spain 8; France 6; Morocco 2.
Beryllium:				
Oxides and hydroxides	38	24	1	France 23.
Metal including alloys, all forms	20	[2]	--	All to United Kingdom.
Bismuth: Metal including alloys, all forms	40	25	--	United Kingdom 23; West Germany 1.
Cadmium: Metal including alloys, all forms	322	224	--	Netherlands 121; Belgium-Luxembourg 62; United Kingdom 20.

See footnotes at end of table.

Table 2.—Italy: Exports of mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Commodity	1985	1986	Destinations, 1986	
			United States	Other (principal)
METALS --Continued				
Cesium and rubidium: Metal including alloys, all forms	5	4	--	Portugal 3; West Germany 1.
Chromium:				
Ore and concentrate	1,544	3,710	5	Austria 2,561; Yugoslavia 825; France 168.
Oxides and hydroxides	25,549	NA		
Metal including alloys, all forms	138	212	--	West Germany 137; France 45; Spain 25.
Cobalt:				
Ore and concentrate	2			
Oxides and hydroxides	20	43	--	Ecuador 25; West Germany 12; France 3.
Metal including alloys, all forms	55	87	--	United Kingdom 36; France 18; West Germany 11.
Columbium and tantalum: Metal including alloys, all forms:				
Columbium (niobium)	(2)	1	--	Mainly to France.
Tantalum	6	11	--	West Germany 10.
Copper:				
Ore and concentrate	1,685	25	--	Austria 23; Netherlands 2.
Matte and speiss, including cement copper	1,192	556	3	Spain 552.
Oxides and hydroxides	2,042	1,722	73	West Germany 631; Netherlands 172; France 133.
Ash and residue containing copper	5,084	4,997	21	West Germany 2,732; Austria 1,181; India 369.
Metal including alloys:				
Scrap	14,814	10,897	--	West Germany 8,154; France 895; Belgium-Luxembourg 571.
Unwrought	14,112	8,805	447	Belgium-Luxembourg 2,023; France 1,948; Spain 1,060.
Semimanufactures	124,236	130,334	5,233	France 31,517; West Germany 23,002; Spain 13,285.
Germanium: Metal including alloys, all forms	1	4	--	Belgium-Luxembourg 2; Sweden 2.
Gold:				
Waste and sweepings, value, thousands	$13	$102	$3	Republic of South Africa $33; West Germany $17; Japan $13.
Metal including alloys, unwrought and partly wrought, troy ounces	166,189	94,267	25,046	Switzerland 29,161; United Kingdom 9,870.
Hafnium: Metal including alloys, all forms	(2)	(2)	--	All to Tunisia.
Iron and steel:				
Iron ore and concentrate:				
Excluding roasted pyrite	35	2,520	--	Brazil 2,500; China 12; Austria 8.
Pyrite, roasted	22,873	43,235	--	France 17,883; Greece 15,719; Lebanon 8,101.
Metal:				
Scrap	9,861	7,261	58	West Germany 3,371; France 2,617; Morocco 474.
Pig iron, cast iron, related materials	33,234	74,406	137	East Germany 30,446; West Germany 16,287; Spain 8,600.
Ferroalloys:				
Ferrochromium	24,401	24,396	301	West Germany 14,402; France 4,059; United Kingdom 3,105.
Ferromanganese	301	383	--	West Germany 131; France 129; Austria 26.
Ferromolybdenum	175	38	--	Yugoslavia 29; United Kingdom 7; Greece 2.
Ferronickel	(2)	239	--	France 166; Austria 71; Israel 1.
Ferrosilicochromium	191	46	--	West Germany 24; France 22.
Ferrosilicomanganese	2,677	5,197	454	France 3,087; West Germany 1,303.
Ferrosilicon	16,782	12,306	830	France 4,753; West Germany 4,475.
Silicon metal	9,973	8,810	--	West Germany 3,648; Japan 3,137; United Kingdom 526.
Unspecified	7,648	8,652	17	United Kingdom 1,155; West Germany 1,153; Romania 1,018.
Steel, primary forms, thousand tons	1,138	1,194	79	France 170; Argentina 122; China 114.

See footnotes at end of table.

Table 2.—Italy: Exports of mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Commodity	1985	1986	Destinations, 1986	
			United States	Other (principal)
METALS —Continued				
Iron and steel —Continued				
Metal —Continued				
Semimanufactures:				
Bars, rods, angles, shapes, sections do	2,569	2,280	13	West Germany 830; France 619; Switzerland 166.
Universals, plates, sheets do	1,805	1,350	155	France 214; U.S.S.R. 165; West Germany 161.
Hoop and strip do	185	187	3	France 51; West Germany 41; Austria 14.
Rails and accessories do	16	18	(2)	Bangladesh 6; Switzerland 5; Senegal 3.
Wire do	173	198	7	France 52; West Germany 32; Switzerland 23.
Tubes, pipes, fittings do	2,092	2,001	114	U.S.S.R. 667; West Germany 280; France 182.
Castings and forgings rough do	59	51	2	Yugoslavia 12; France 5; U.S.S.R. 5.
Lead:				
Ore and concentrate	24,907	14,498	--	Spain 4,200; Bulgaria 4,000; Yugoslavia 3,800.
Oxides	2,502	851	--	Romania 471; Egypt 109; Poland 65.
Ash and residue containing lead	4,425	7,159	--	France 5,250; Belgium-Luxembourg 1,693; United Kingdom 207.
Metal including alloys:				
Scrap	1,255	96	--	West Germany 71; Switzerland 24; France 1.
Unwrought	11,786	10,448	34	Iran 5,703; Turkey 1,047; East Germany 852.
Semimanufactures	179	276	5	Libya 81; Greece 42; Ethiopia 28.
Lithium:				
Oxides and hydroxides	18	3	--	Yugoslavia 2; Venezuela 1.
Metal including alloys, all forms	(2)	--	--	
Magnesium: Metal including alloys:				
Scrap	858	566	40	West Germany 392; Austria 68.
Unwrought	5,216	5,262	25	West Germany 2,303; Switzerland 862; Austria 726.
Semimanufactures	640	1,226	(2)	Belgium-Luxembourg 803; France 167; United Kingdom 98.
Manganese:				
Ore and concentrate, metallurgical-grade	1,272	1,745	--	France 948; Netherlands 758; West Germany 48.
Oxides	260	194	--	Belgium-Luxembourg 85; Netherlands 24; West Germany 21.
Metal including alloys, all forms	70	34	--	West Germany 33; France 1.
Mercury 76-pound flasks	563	45,008	--	Austria 43,616; France 870; Republic of South Africa 522.
Molybdenum:				
Ore and concentrate	43	22	--	All to Netherlands.
Oxides and hydroxides	10	(2)	--	All to Switzerland.
Metal including alloys:				
Scrap	1	35	--	West Germany 34; France 1.
Unwrought	(2)	(2)	--	Mainly to United Kingdom.
Semimanufactures	3	30	2	France 15; Yugoslavia 10.
Nickel:				
Matte and speiss	18	(2)	--	All to Canada.
Oxides and hydroxides	1	33	--	All to Cuba.
Ash and residue containing nickel	358	87	--	Austria 60; Netherlands 27.
Metal including alloys:				
Scrap	118	162	52	West Germany 91; Switzerland 9.
Unwrought	125	88	24	United Kingdom 42; Yugoslavia 8.
Semimanufactures	1,168	845	12	United Kingdom 127; France 115; West Germany 111.
Platinum-group metals:				
Waste and sweepings value, thousands	$53	$1	--	All to West Germany.
Metals including alloys, unwrought and partly wrought troy ounces	77,861	142,911	37,231	United Kingdom 33,523; West Germany 19,548.
Rare-earth metals including alloys, all forms	38	14	--	Switzerland 7; Greece 4; United Kingdom 2.
Rhenium: Metal including alloys, all forms	1	(2)	--	Mainly to United Kingdom.

See footnotes at end of table.

Table 2.—Italy: Exports of mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Commodity	1985	1986	Destinations, 1986	
			United States	Other (principal)
METALS —Continued				
Selenium, elemental	1	1	--	All to Venezuela.
Silicon, high-purity	214	129	42	Japan 78; West Germany 5.
Silver:				
Waste and sweepings value, thousands	45	--		
Metal including alloys, unwrought and partly wrought thousand troy ounces	5,405	4,533	NA	Switzerland 3,807; France 145; United Kingdom 55.
Tellurium and arsenic, elemental	(2)	9	--	Pakistan 5; United Kingdom 4.
Tin:				
Ore and concentrate	--	18	--	All to Switzerland.
Oxides	238	124	--	France 40; Spain 40; West Germany 14.
Ash and residue containing tin	160	88	--	All to United Kingdom.
Metal including alloys:				
Scrap	60	260	--	West Germany 105; Netherlands 50; Belgium-Luxembourg 22.
Unwrought	197	163	--	United Kingdom 53; Netherlands 52; Yugoslavia 45.
Semimanufactures	136	110	31	West Germany 25; Switzerland 20.
Titanium:				
Ore and concentrate	1,906	1,335	--	Yugoslavia 500; France 387; Turkey 200.
Oxides	874	438	20	France 107; Yugoslavia 87; Austria 62.
Metal including alloys:				
Scrap	35	124	(2)	United Kingdom 70; West Germany 44; France 9.
Unwrought	4	(2)	--	Mainly to Yugoslavia.
Semimanufactures	90	88	5	Switzerland 37; Morocco 8; India 6.
Tungsten:				
Ore and concentrate	5	5	--	All to Austria.
Oxides and hydroxides	1	8	--	France 7; Netherlands 1.
Ashes and residues containing tungsten	4	--		
Metal including alloys:				
Scrap	46	33	--	West Germany 21; Belgium-Luxembourg 6; Austria 5.
Unwrought	125	86	61	West Germany 19; Belgium-Luxembourg 4.
Semimanufactures	15	67	15	Egypt 34; United Kingdom 6.
Uranium and thorium:				
Ore and concentrate	21	331	--	Netherlands 187; Albania 79; Argentina 60.
Metal including alloys, all forms:				
Uranium	1	--		
Thorium	--	(2)	--	All to Netherlands.
Vanadium:				
Oxides and hydroxides	1	2	--	All to Turkey.
Ash and residue containing vanadium	1,901	1,238	654	West Germany 494; Paraguay 54.
Metal including alloys:				
Scrap	--	1	--	Mainly to France.
Unwrought	(2)	(2)	--	All to Sweden.
Semimanufactures	--	2	--	Mainly to France.
Zinc:				
Ore and concentrate	25,283	14,908	--	Austria 9,008; Belgium-Luxembourg 5,027; Yugoslavia 793.
Oxides	5,334	5,057	3	West Germany 1,962; France 1,665; Belgium-Luxembourg 385.
Blue powder	315	254	--	West Germany 135; France 70; Belgium-Luxembourg 37.
Matte	555	506	42	West Germany 277; Spain 118; France 45.
Ash and residue containing zinc	6,233	6,768	25	West Germany 3,677; Belgium-Luxembourg 1,359; Spain 1,038.
Metal including alloys:				
Scrap	4,512	4,159	--	West Germany 3,584; France 192; Spain 151.
Unwrought	45,772	48,816	9,001	U.S.S.R. 7,944; Turkey 6,213.
Semimanufactures	1,776	4,377	1	West Germany 2,855; France 866; Portugal 310.

See footnotes at end of table.

Table 2.—Italy: Exports of mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Commodity	1985	1986	Destinations, 1986	
			United States	Other (principal)
METALS —Continued				
Zirconium:				
Ore and concentrate	5,073	8,137	—	Hungary 4,778; Brazil 815; Spain 729.
Metal including alloys:				
Scrap	9	4	(2)	Mainly to France.
Unwrought	2	5	(2)	Mainly to Sweden.
Semimanufactures	63	22	(2)	Turkey 20; France 2.
Other:				
Ores and concentrates	4,655	472	—	Spain 232; West Germany 82; France 21.
Oxides and hydroxides	37	428	2	Netherlands 75; Venezuela 65; West Germany 56.
Ashes and residues	16,789	13,393	91	Canada 3,008; Belgium-Luxembourg 2,764; West Germany 1,722.
Base metals including alloys, all forms	154	12	10	West Germany 1; Italy 1.
INDUSTRIAL MINERALS				
Abrasives, n.e.s.:				
Natural: Corundum, emery, pumice, etc	109,356	97,473	22,636	United Kingdom 41,662; Algeria 12,737.
Artificial:				
Corundum	6,386	5,739	455	Bulgaria 1,167; France 757; Austria 679.
Silicon carbide	11,711	11,962	294	France 2,788; West Germany 2,755; Belgium-Luxembourg 1,117.
Dust and powder of precious and semiprecious stones including diamond kilograms	320	182	103	United Kingdom 19; France 17.
Grinding and polishing wheels and stones	27,997	22,371	1,144	France 3,270; West Germany 1,838; Saudi Arabia 1,583.
Asbestos, crude	66,244	45,187	—	West Germany 13,034; France 10,572; Spain 3,895.
Barite and witherite	27,136	3,902	—	Yugoslavia 1,805; Nigeria 1,000; Congo 680.
Boron materials:				
Crude natural borates	2,461	1,176	—	Austria 287; Yugoslavia 238; Belgium-Luxembourg 98.
Elemental	44	242	—	Libya 99; Greece 75; Yugoslavia 26.
Oxides and acids	17,997	17,903	—	Austria 12,365; Pakistan 3,318; Finland 1,783.
Bromine	73	86	—	West Germany 50; France 29; Switzerland 7.
Cement	282,633	275,133	32	Switzerland 121,730; Algeria 31,549; France 29,951.
Chalk	5,931	2,259	—	West Germany 2,782; Switzerland 330; Togo 63.
Clays, crude:				
Bentonite	28,063	20,779	36	France 10,477; Netherlands 4,309; Tunisia 2,070.
Chamotte earth	3,199	3,462	—	Tunisia 2,350; Switzerland 397; East Germany 224.
Fuller's earth	33	22	—	United Kingdom 21; France 12.
Kaolin	50,395	23,117	1	France 17,987; Tunisia 1,620; Israel 1,350.
Unspecified	14,346	16,252	20	Turkey 12,450; Switzerland 857; Tunisia 691.
Cryolite and chiolite	43	25	—	West Germany 10; Turkey 10; Greece 2.
Diamond:				
Gem, not set or strung carats	3,454	14,292	991	Belgium-Luxembourg 159; Switzerland 102; undetermined 13,040.
Industrial stones kg	49,029	1,108	—	France 882.
Diatomite and other infusorial earth	4,114	3,037	—	Austria 1,282; Switzerland 567; West Germany 375.
Feldspar, fluorspar, related materials:				
Feldspar	39,139	29,413	—	West Germany 15,568; Switzerland 5,293; Algeria 1,000.
Fluorspar	44,786	11,744	—	United Kingdom 3,500; West Germany 3,250; Austria 2,327.
Unspecified	564	263	20	Austria 148; Switzerland 52; West Germany 24.

See footnotes at end of table.

Table 2.—Italy: Exports of mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Commodity	1985	1986	Destinations, 1986	
			United States	Other (principal)
INDUSTRIAL MINERALS —Continued				
Fertilizer materials:				
Crude, n.e.s.	24,891	24,739	392	France 9,944; Switzerland 3,202; Malta 3,000.
Manufactured:				
Ammonia	129,076	185,996	--	Greece 67,334; Spain 39,101; Turkey 35,288.
Nitrogenous	1,106,832	1,037,855	73,819	Greece 174,533; Turkey 141,221; Spain 109,406.
Phosphatic	4,477	4,007	--	Austria 1,574; Saudi Arabia 724; West Germany 348.
Potassic	111,417	66,375	104	Greece 14,500; Turkey 12,300; Algeria 10,201.
Unspecified and mixed	481,486	490,170	24	West Germany 61,189; China 55,349; France 55,237.
Graphite, natural	444	243	17	Switzerland 73; West Germany 52; France 19.
Gypsum and plaster	16,773	13,893	--	Switzerland 10,848; Greece 855; United Kingdom 431.
Iodine	2	50	--	Yugoslavia 40; West Germany 7; United Kingdom 1.
Kyanite and related materials	--	1,021	--	West Germany 766; Netherlands 104; United Kingdom 88.
Lime	39,872	34,518	270	Switzerland 33,411; Austria 302.
Magnesium compounds:				
Magnesite	2,373	719	--	Netherlands 267; Saudi Arabia 207; Switzerland 90.
Oxides and hydroxides	116,014	175,753	--	West Germany 32,132; Austria 24,631; Republic of South Africa 16,359.
Other	68	48	--	Belgium-Luxembourg 24. France 24.
Mica:				
Crude including splittings and waste	229	123	--	Belgium-Luxembourg 64; West Germany 31; Republic of Korea 18.
Worked including agglomerated splittings	34	57	--	France 27; Saudi Arabia 15; West Germany 5.
Nitrates, crude	42	128	--	United Kingdom 104; West Germany 24.
Phosphates, crude	366	224	--	Switzerland 64; Netherlands 35; France 27.
Pigments, mineral:				
Natural, crude	602	285	30	Netherlands 54; Portugal 48; Somalia 39.
Iron oxides and hydroxides, processed	9,452	7,809	1	France 1,906; West Germany 1,131; United Kingdom 856.
Potassium salts, crude	(2)	48	--	West Germany 25; Israel 10; United Kingdom 10.
Precious and semiprecious stones other than diamond:				
Natural kilograms	2,580	181	NA	Hong Kong 60.
Synthetic do.	1,076	462	NA	West Germany 256; Brazil 34.
Pyrite, unroasted	4,778	4,676	445	West Germany 2,504; France 838; Austria 476.
Quartz crystal, piezoelectric kilograms	NA	1	NA	NA.
Salt and brine	428,589	619,179	219,138	Netherlands 119,710; United Kingdom 87,490.
Sodium compounds, n.e.s.: Carbonate, manufactured	55,087	57,932	--	Israel 23,338; Greece 14,009; Algeria 8,996.
Stone, sand and gravel:				
Dimension stone:				
Crude and partly worked	459,071	390,003	15,237	West Germany 64,252; Japan 52,443; France 35,293.
Worked	1,764,540	1,568,336	222,628	West Germany 445,980; Saudi Arabia 253,341.
Dolomite, chiefly refractory-grade	35,056	40,488	--	France 22,721; Switzerland 10,313; West Germany 3,246.
Gravel and crushed rock	803,524	856,491	2,110	Switzerland 256,243; Algeria 92,508; Kuwait 85,513.
Limestone other than dimension	3,064	869	--	Austria 484; Switzerland 177; France 175.
Quartz and quartzite	31,060	29,310	3	Switzerland 12,415; France 7,857; West Germany 5,463.
Sand other than metal-bearing	r112,162	152,607	38	Switzerland 146,411; France 1,616; Libya 509.

See footnotes at end of table.

Table 2.—Italy: Exports of mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Commodity	1985	1986	Destinations, 1986	
			United States	Other (principal)
INDUSTRIAL MINERALS —Continued				
Sulfur:				
Elemental:				
Crude including native and by-product	14,455	3,633	--	Yugoslavia 2,994; France 402; Tanzania 50.
Colloidal, precipitated, sublimed	21	449	--	Libya 402; France 20; Israel 11.
Dioxide	82	535	--	Yugoslavia 355; Israel 59; Belgium-Luxembourg 50.
Sulfuric acid	117,500	111,174	7,000	Belgium-Luxembourg 20,951; Spain 18,643; Greece 17,500.
Talc, steatite, soapstone, pyrophyllite	41,987	43,076	2,637	West Germany 14,214; United Kingdom 7,444; France 5,202.
Vermiculite, perlite, chlorite	61,976	54,918	--	United Kingdom 41,000; France 13,025; Switzerland 636.
Other:				
Crude	13,716	8,996	3	Switzerland 3,086; Spain 938; France 838.
Slag and dross, not metal-bearing	187,439	416,031	--	Greece 334,246; Cyprus 52,500; Austria 19,157.
MINERAL FUELS AND RELATED MATERIALS				
Asphalt and bitumen, natural	717	1,363	62	Malta 341; Iraq 292; France 160.
Carbon:				
Carbon black	1,542	470	6	West Germany 88; France 64; Spain 63.
Gas carbon	71,350	59,523	20	Yugoslavia 15,849; Austria 9,937; Turkey 7,784.
Coal:				
Anthracite	7,039	1,786	--	France 1,564; Austria 155; Switzerland 25.
Bituminous	33,998	3,601	--	Switzerland 2,949; Yugoslavia 700.
Briquets of anthracite and bituminous coal	488	158	--	Kuwait 98; France 30; Israel 29.
Lignite including briquets	26	26	--	All to France.
Coke and semicoke	430,766	175,517	--	Austria 47,128; Romania 31,207; Hungary 28,582.
Gas natural: Gaseous million cubic feet	2	1	--	Mainly to France.
Peat including briquets and litter	154	202	--	West Germany 99; France 39; Austria 32.
Petroleum:				
Crude thousand 42-gallon barrels	1,909	1,279	(2)	West Germany 1,178; France 101.
Refinery products:				
Liquefied petroleum gas do.	2,956	2,893	372	Greece 905; France 446.
Gasoline do.	37,343	40,846	11,066	France 8,251; Netherlands 7,386.
Mineral jelly and wax do.	50	833	422	Netherlands 388; West Germany 8.
Kerosene and jet fuel do.	11,529	12,242	963	Netherlands 2,116; Iran 1,677.
Distillate fuel oil do.	16,713	32,124	452	France 10,624; Netherlands 5,247; Switzerland 2,831.
Lubricants do.	3,397	3,430	1	West Germany 377; Algeria 307; Netherlands 242.
Residual fuel oil do.	19,490	29,389	7,422	Netherlands 7,489; Belgium-Luxembourg 2,849.
Bitumen and other residues do.	871	654	(2)	Austria 330; Switzerland 187; Greece 58.
Bituminous mixtures do.	25	46	2	Netherlands 15; Libya 9; Belgium-Luxembourg 6.
Petroleum coke do.	64	99	--	Austria 91; Malta 1.

[r] Revised. NA Not available.
[1] Table prepared by Josef Plachy.
[2] Less than 1/2 unit.

Table 3.—Italy: Imports of mineral commodities[1]

(Metric tons unless otherwise specified)

Commodity	1985	1986	Destinations, 1986	
			United States	Other (principal)
METALS				
Alkali and alkaline-earth metals:				
Alkali metals	6,123	4,959	--	France 2,957; West Germany 1,958; Austria 23.
Alkaline-earth metals	102	60	--	Belgium-Luxembourg 14; U.S.S.R. 10; Austria 5.
Aluminum:				
Ore and concentrate	1,277,114	1,695,994	14	Guinea 782,221; Australia 510,775; China 47,120.
Oxides and hydroxides	291,344	376,902	398	Guinea 121,593; West Germany 72,610; France 66,464.
Ash and residue containing aluminum	96,583	106,726	132	Austria 83,118; France 13,705; West Germany 2,359.
Metal including alloys:				
Scrap	148,472	192,129	8,618	West Germany 43,832; France 41,975; Austria 27,944.
Unwrought	319,876	347,690	21	Netherlands 80,398; West Germany 55,185; Yugoslavia 52,121.
Semimanufactures	123,358	139,145	3,159	West Germany 56,657; France 22,333; Belgium-Luxembourg 11,412.
Antimony:				
Ore and concentrate	57	20	20	
Oxides	893	1,163	15	Belgium-Luxembourg 517; United Kingdom 243; France 167.
Metal including alloys, all forms	247	221	(2)	Turkey 93; Netherlands 69; Belgium-Luxembourg 14.
Arsenic: Oxides and acids	454	534	--	France 176; Belgium-Luxembourg 142; West Germany 72.
Beryllium:				
Oxides and hydroxides	23	25	(2)	France 24; United Kingdom 1.
Metal including alloys, all forms	(2)	(2)	(2)	
Bismuth: Metal including alloys, all forms	89	110	--	United Kingdom 74; West Germany 18; Netherlands 8.
Cadmium: Metal including alloys, all forms	54	96	1	Netherlands 47; Belgium-Luxembourg 21; Finland 6.
Cesium and rubidium: Metal including alloys, all forms	7	10	--	Austria 7; United Kingdom 3.
Chromium:				
Ore and concentrate	229,118	152,169	--	Albania 63,840; Republic of South Africa 43,240; Turkey 19,632.
Oxides and hydroxides	2,050	2,958	815	West Germany 1,432; United Kingdom 375.
Metal including alloys, all forms	193	198	1	United Kingdom 82; France 43; China 34.
Cobalt:				
Ore and concentrate	3			
Oxides and hydroxides	230	235	(2)	Belgium-Luxembourg 163; Finland 36; West Germany 21.
Metal including alloys, all forms	415	620	5	West Germany 116; France 102; United Kingdom 80.
Columbium and tantalum: Metal including alloys, all forms:				
Columbium (niobium)	2	34	28	Netherlands 2; Republic of South Africa 2.
Tantalum	4	3	2	West Germany 1.
Copper:				
Ore and concentrate	24	1	--	All from Zambia.
Matte and speiss including cement copper	683	188	--	France 106; Belgium-Luxembourg 52; Switzerland 15.
Oxides and hydroxides	299	342	3	West Germany 136; Norway 128; Belgium-Luxembourg 53.
Sulfate	2,719	380	--	France 298; Czechoslovakia 80; Netherlands 1.
Ash and residue containing copper	7,367	6,428	--	Austria 3,282; Albania 2,974; Belgium-Luxembourg 76.
Metal including alloys:				
Scrap	120,860	145,698	37,181	United Kingdom 32,508; France 31,426.
Unwrought	363,440	369,967	1,674	Chile 128,112; Zambia 43,921; Belgium-Luxembourg 32,758.
Semimanufactures	145,503	155,596	332	West Germany 56,216; France 49,994; Belgium-Luxembourg 12,627.
Germanium: Metal including alloys, all forms	84	1	(2)	Mainly from Belgium-Luxembourg.

See footnotes at end of table.

Table 3.—Italy: Imports of mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Commodity	1985	1986	Destinations, 1986	
			United States	Other (principal)
METALS —Continued				
Gold:				
Waste and sweepings value, thousands	--	$1	--	All from Cyprus.
Metal including alloys, unwrought and partly wrought thousand troy ounces	7,458	6,985	96	Republic of South Africa 3,651; Switzerland 2,454; U.S.S.R. 312.
Hafnium: Metal including alloys, all forms	(2)	(2)	(2)	Mainly from France.
Iron and steel:				
Iron ore and concentrate:				
Excluding roasted pyrite thousand tons	18,294	17,600	--	Brazil 5,939; Liberia 3,322; Mauritania 2,253.
Pyrite, roasted do	(2)	(2)	--	Mainly from Gabon.
Metal:				
Scrap do	5,777	4,746	314	West Germany 1,731; France 1,358; U.S.S.R. 692.
Pig iron, cast iron, related materials	351,494	471,042	593	U.S.S.R. 86,320; Brazil 71,778; France 70,760.
Ferroalloys:				
Ferrochromium	97,833	99,030	11	Republic of South Africa 39,049; Zimbabwe 24,018; Finland 11,890.
Ferromanganese	81,823	90,052	--	France 38,579; Republic of South Africa 24,783; Norway 8,437.
Ferromolybdenum	1,500	1,979	--	Belgium-Luxembourg 836; Austria 549; Netherlands 310.
Ferronickel	22,085	21,719	--	France 9,654; Colombia 4,787; Dominican Republic 3,645.
Ferrosilicochromium	1,114	1,826	--	West Germany 1,801; Belgium-Luxembourg 25.
Ferrosilicomanganese	27,008	23,545	--	Norway 10,300; Republic of South Africa 5,267; Portugal 2,390.
Ferrosilicon	48,133	55,361	--	West Germany 15,772; France 14,718; Norway 12,483.
Silicon metal	13,349	14,145	(2)	Norway 5,372; France 3,451; West Germany 1,681.
Unspecified	6,338	8,412	13	France 3,416; United Kingdom 1,275; West Germany 970.
Steel, primary forms thousand tons	2,971	3,356	13	France 851; Belgium-Luxembourg 488; Brazil 358.
Semimanufactures:				
Bars, rods, angles, shapes, sections do	1,035	1,184	13	France 278; West Germany 236; Switzerland 119.
Universals, plates, sheets do	1,594	1,771	37	France 394; Belgium-Luxembourg 318; West Germany 242.
Hoop and strip do	206	195	(2)	West Germany 65; France 62; Austria 17.
Rails and accessories do	78	62	(2)	Netherlands 19; Canada 18; West Germany 12.
Wire do	94	84	(2)	Yugoslavia 26; Belgium-Luxembourg 24; France 9.
Tubes, pipes, fittings do	341	366	5	West Germany 123; France 92; United Kingdom 27.
Castings and forgings, rough do	14	17	(2)	Spain 5; France 4; West Germany 4.
Lead:				
Ore and concentrate	12,019	30,945	--	Canada 10,267; Spain 7,560; Australia 5,270.
Oxides	1,762	711	12	West Germany 559; Netherlands 95; United Kingdom 40.
Ash and residue containing lead	4,237	1,286	--	West Germany 688; Switzerland 236; Cyprus 185.
Metal including alloys:				
Scrap	12,763	18,122	57	Switzerland 9,180; Austria 2,239; France 2,062.
Unwrought	114,995	140,804	150	West Germany 30,618; Morocco 26,311; Mexico 19,182.
Semimanufactures	774	984	2	Belgium-Luxembourg 367; West Germany 264; France 140.

See footnotes at end of table.

Table 3.—Italy: Imports of mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Commodity	1985	1986	Destinations, 1986	
			United States	Other (principal)[1]
METALS —Continued				
Lithium:				
Oxides and hydroxides	298	267	5	West Germany 171; United Kingdom 23; Netherlands 17.
Metal including alloys, all forms	6	3	3	
Magnesium: Metal including alloys:				
Scrap	1,662	877	13	West Germany 324; Netherlands 212; France 105.
Unwrought	2,519	1,601	--	Norway 753; France 543; Belgium-Luxembourg 90.
Semimanufactures	754	752	62	France 550; West Germany 50.
Manganese:				
Ore and concentrate, metallurgical-grade	392,646	329,736	9,000	Gabon 175,622; Republic of South Africa 111,479; France 9,006.
Oxides	2,417	2,499	2	Belgium-Luxembourg 1,358; France 448; Netherlands 228.
Metal including alloys, all forms	3,521	1,836	1	Republic of South Africa 725; Netherlands 247; West Germany 217.
Mercury 76-pound flasks	4,930	5,197	58	Netherlands 2,755; United Kingdom 754; West Germany 667.
Molybdenum:				
Ore and concentrate	4,810	2,742	162	Netherlands 1,496; Luxembourg 453; Chile 374.
Oxides and hydroxides	65	65	11	West Germany 45; United Kingdom 5.
Metal including alloys:				
Scrap	(2)	35	--	All from France.
Unwrought	29	75	2	Austria 48; West Germany 19; United Kingdom 5.
Semimanufactures	113	155	91	Austria 42; France 6.
Nickel:				
Ore and concentrate	118	7	--	All from France.
Matte and speiss	4,426	4,927	--	Australia 3,425; Cuba 584; Netherlands 528.
Oxides and hydroxides	975	1,836	--	Cuba 1,193; Austria 438; Australia 117.
Ash and residue containing nickel	8,545	3	--	All from France.
Scrap	270	86	6	West Germany 38; France 19; United Kingdom 11.
Unwrought	17,919	18,387	314	U.S.S.R. 3,292; Canada 2,957; Netherlands 2,594.
Semimanufactures	3,039	2,812	286	West Germany 1,053; United Kingdom 732.
Platinum-group metals:				
Waste and sweepings: value, thousands	$4,001	$9,295	$3,816	Yugoslavia $3,450; Egypt $708.
Metal including alloys, unwrought and partly wrought troy ounces	202,358	237,274	9,517	United Kingdom 76,648; Switzerland 48,548; Republic of South Africa 15,432.
Rare-earth metals including alloys, all forms	16	65	1	Brazil 42; Austria 16; France 2.
Rhenium: Metal including alloys, all forms	(2)	(2)	(2)	
Selenium, elemental	290	34	3	West Germany 7; Japan 7; United Kingdom 7.
Silicon, high-purity	7	20	(2)	Switzerland 15; Belgium-Luxembourg 3.
Silver:				
Waste and sweepings: value, thousands	$3,556	$3,521	$805	France $1,424; Switzerland $1,146.
Metal including alloys, unwrought and partly wrought thousand troy ounces	8,842	18,667	129	Switzerland 8,594; West Germany 2,726; United Kingdom 2,582.
Tellurium, elemental and arsenic	59	65	--	Sweden 63; Belgium-Luxembourg 1; Canada 1.
Tin:				
Ore and concentrate	--	24	--	All from West Germany.
Oxides	28	21	--	Czechoslovakia 20; West Germany 1.
Ash and residue containing tin	12	15	--	All from France.
Metal including alloys:				
Scrap	5	9	--	France 5; Gibraltar 4.
Unwrought	5,636	6,330	5	Malaysia 2,339; Indonesia 2,031; United Kingdom 593.
Semimanufactures	245	253	1	West Germany 150; United Kingdom 40; Singapore 33.

See footnotes at end of table.

Table 3.—Italy: Imports of mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Commodity	1985	1986	Destinations, 1986	
			United States	Other (principal)
METALS —Continued				
Titanium:				
Ore and concentrate	146,179	54,848	18	Canada 36,514; Australia 16,041; Republic of South Africa 2,136.
Oxides	29,601	28,712	30	West Germany 13,976; United Kingdom 3,781; France 2,507.
Metal including alloys:				
Scrap	2,481	2,911	1,198	Austria 1,474; Netherlands 76.
Unwrought	75	67	1	U.S.S.R. 25; United Kingdom 21; West Germany 16.
Semimanufactures	453	495	108	Japan 132; West Germany 60.
Tungsten:				
Ore and concentrate	181	144	18	Canada 74; Austria 23.
Oxides and hydroxides	26	46	--	Austria 45; West Germany 1.
Metal including alloys:				
Scrap	1	1	--	All from West Germany.
Unwrought	39	35	9	United Kingdom 9; France 6.
Semimanufactures	91	110	15	West Germany 24; United Kingdom 21.
Uranium and thorium:				
Ore and concentrate	67	56	--	France 23; Chile 18; West Germany 14.
Metal including alloys, all forms:				
Uranium	18	2	(2)	Mainly from West Germany.
Thorium	1	(2)	--	All from West Germany.
Vanadium:				
Ore and concentrate	--	1,208	--	Greece 1,200; United Kingdom 8.
Oxides and hydroxides	30	15	--	Netherlands 13; West Germany 2.
Ash and residue containing vanadium	2,508	2,178	--	Austria 1,752; France 227; West Germany 199.
Metal including alloys:				
Scrap	8	23	--	All from West Germany.
Unwrought	27	50	1	Belgium-Luxembourg 39; West Germany 5.
Semimanufactures	(2)	18	--	France 11; Belgium-Luxembourg 7.
Zinc:				
Ore and concentrate	395,978	443,572	--	Ireland 116,817; Canada 76,702; Peru 68,568.
Oxides	5,048	5,552	--	West Germany 1,902; France 962; Belgium-Luxembourg 788.
Blue powder	1,716	2,094	--	West Germany 776; France 556; Norway 505.
Matte	12,230	11,805	73	West Germany 3,669; France 2,982; United Kingdom 1,041.
Ash and residue containing zinc	6,483	5,821	--	West Germany 5,032; Switzerland 334; Tunisia 142.
Metal including alloys:				
Scrap	10,563	8,237	--	France 4,178; West Germany 2,010; Switzerland 581.
Unwrought	78,350	68,565	--	West Germany 26,712; Netherlands 12,616; Belgium-Luxembourg 8,995.
Semimanufactures	4,203	4,851	--	West Germany 3,334; France 533; Belgium-Luxembourg 498.
Zirconium:				
Ore and concentrate	84,627	48,175	--	Australia 36,850; Republic of South Africa 10,822; West Germany 281.
Metal including alloys:				
Scrap	7	15	--	France 10; West Germany 5.
Unwrought	4	25	--	Republic of South Africa 20; France 5.
Semimanufactures	49	33	19	United Kingdom 10; West Germany 3.
Other:				
Ores and concentrates	1,655	10,273	--	Canada 7,421; China 2,516; Denmark 242.
Oxides and hydroxides	369	904	3	Belgium-Luxembourg 391; West Germany 359; United Kingdom 265.
Ashes and residues	99,229	96,080	120	Republic of South Africa 64,966; Canada 20,761; Hungary 2,705.
Base metals including alloys, all forms	144	3	(2)	United Kingdom 2.

See footnotes at end of table.

Table 3.—Italy: Imports of mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Commodity	1985	1986	Destinations, 1986	
			United States	Other (principal)
INDUSTRIAL MINERALS				
Abrasives, n.e.s.:				
Natural: Corundum, emery, pumice, etc	3,782	6,820	101	Greece 4,779; Turkey 459; Spain 166.
Artificial:				
Corundum	33,778	32,268	465	West Germany 8,824; Austria 8,376; Yugoslavia 4,930.
Silicon carbide	12,468	19,191	(2)	Norway 3,391; West Germany 2,003; Switzerland 1,650.
Dust and powder of precious and semi-precious stones including diamond kilograms	2,729	3,185	650	Switzerland 1,311; Ireland 767.
Grinding and polishing wheels and stones	4,240	4,531	23	Austria 1,456; France 777; West Germany 617.
Asbestos, crude	47,952	47,895	109	Canada 23,668; Zimbabwe 8,176; Republic of South Africa 5,246.
Barite and witherite	19,388	24,615	--	Spain 9,669; Turkey 3,600; Morocco 3,331.
Boron materials:				
Crude natural borates	121,375	116,854	--	Turkey 115,899; Belgium-Luxembourg 800; France 89.
Elemental	(2)	(2)	(2)	
Oxides and acids	3,839	6,592	320	Turkey 4,531; France 1,218.
Bromine	1,614	2,613	--	Israel 2,585; France 24; Hungary 4.
Cement	381,461	319,451	74	Yugoslavia 243,111; France 66,833; Spain 3,264.
Chalk	27,649	9,717	--	France 9,506; West Germany 115; Austria 94.
Clays, crude:				
Bentonite	20,731	31,615	50	Greece 23,520; West Germany 1,914; United Kingdom 1,026.
Chamotte earth	64,681	61,090	1,684	France 36,890; Czechoslovakia 12,038; West Germany 4,897.
Fuller's earth	NA	2,575	1,019	Spain 1,507; Netherlands 25.
Kaolin	635,996	617,612	122,707	United Kingdom 284,693; West Germany 53,871.
Unspecified	936,110	951,724	422	West Germany 773,583; France 104,686; United Kingdom 51,440.
Cryolite and chiolite	814	873	--	Denmark 696; West Germany 171; Netherlands 6.
Diamond:				
Gem, not set or strung carats	218,458	222,122	NA	Belgium-Luxembourg 105,267; India 39,661; Israel 38,763.
Industrial stones do	187,880	153,921	--	Belgium-Luxembourg 145,366; United Kingdom 5,284.
Diatomite and other infusorial earth	5,044	8,916	220	France 7,887; United Kingdom 251; Spain 250.
Feldspar, fluorspar, related materials:				
Feldspar	12,423	7,119	434	West Germany 3,188; Sweden 1,884; France 1,171.
Fluorspar	91,645	82,274	--	Spain 39,628; France 16,441; Mexico 8,000.
Unspecified	13,936	22,046	--	Norway 10,635; Canada 8,079; Sweden 1,548.
Fertilizer materials:				
Crude, n.e.s	2,711	3,009	132	France 1,455; West Germany 847; Israel 293.
Manufactured:				
Ammonia	160,482	105,938	--	U.S.S.R. 64,052; Yugoslavia 26,057; Austria 11,623.
Nitrogenous	274,265	364,585	168	Saudi Arabia 109,475; Libya 74,675; Austria 52,978.
Phosphatic	211,590	209,634	--	Tunisia 64,535; Israel 60,729; Iraq 32,147.
Potassic	647,695	696,732	130	Israel 223,808; West Germany 95,863; East Germany 92,562.
Unspecified and mixed	716,680	871,451	333,705	Jordan 124,708; Tunisia 120,874.
Graphite, natural	5,955	6,867	7	Brazil 2,118; West Germany 1,716; Austria 1,187.
Gypsum and plaster	13,443	15,469	2,847	West Germany 8,550; France 3,046.
Iodine	538	557	1	Japan 336; Chile 147; Netherlands 56.
Kyanite and related materials	41,159	22,754	696	Republic of South Africa 12,156; Spain 5,224; West Germany 1,596.
Lime	3,115	4,830	--	Yugoslavia 4,222; West Germany 440; France 105.

See footnotes at end of table.

Table 3.—Italy: Imports of mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Commodity	1985	1986	Destinations, 1986	
			United States	Other (principal)
INDUSTRIAL MINERALS —Continued				
Magnesium compounds:				
Magnesite	20,266	12,720	--	Greece 12,067; Albania 480; France 74.
Oxides and hydroxides	79,027	81,008	159	Greece 21,232; Austria 14,989; China 12,628.
Other	3,117	3,587	--	West Germany 3,137; East Germany 450.
Mica:				
Crude including splittings and waste	1,510	1,095	194	France 380; Austria 180.
Worked including agglomerated splittings	543	509	3	Belgium-Luxembourg 169; France 120; West Germany 100.
Nitrates, crude	402	680	--	Belgium-Luxembourg 298; Netherlands 242; Austria 48.
Phosphates, crude thousand tons	1,296	1,389	108	Morocco 573; Israel 295; Syria 130.
Phosphorus, elemental	94	319	--	France 114; Romania 109; United Kingdom 96.
Pigments, mineral:				
Natural, crude	314	270		Cyprus 126; Spain 114; France 24.
Iron oxides and hydroxides, processed	20,404	21,824	331	West Germany 14,913; France 2,769; Belgium-Luxembourg 1,602.
Potassium salts, crude	9,090	7,112	--	France 6,097; West Germany 915; Belgium-Luxembourg 99.
Precious and semiprecious stones other than diamond:				
Natural kilograms	77,083	105,621	114	Brazil 66,622; West Germany 10,329; Thailand 638.
Synthetic do.	6,675	10,451	NA	West Germany 2,430; Thailand 1,901; Switzerland 1,88.
Pyrite, unroasted	167,574	158,970	--	Cyprus 65,045; Norway 54,988; U.S.S.R. 19,835.
Quartz crystal, piezoelectric kilograms	629	505	NA	NA.
Salt and brine	943,874	934,151	26	Netherlands 420,957; France 256,218; Tunisia 128,421.
Sodium compounds, n.e.s.: Carbonate, manufactured	30,744	28,986	--	Switzerland 10,175; Yugoslavia 9,337; Romania 4,751.
Stone, sand and gravel:				
Dimension stone:				
Crude and partly worked	971,585	960,469	8,282	Spain 268,734; Brazil 126,493; Finland 121,286.
Worked	9,386	11,534	2	Greece 2,646; Yugoslavia 2,040; Spain 1,547.
Dolomite, chiefly refractory-grade	2,063	2,370	(3)	West Germany 1,107; Netherlands 494; France 378.
Gravel and crushed rock	14,752	17,112	19	France 13,001; Yugoslavia 1,828; West Germany 886.
Limestone other than dimension	503	774	--	All from West Germany.
Quartz and quartzite	83,622	93,146	73	Switzerland 34,174; Spain 27,816; Greece 11,445.
Sand other than metal-bearing	1,006,583	896,858	1,728	France 553,971; Belgium-Luxembourg 112,692; West Germany 101,802.
Sulfur:				
Elemental:				
Crude including native and by-product	399,495	337,251	50	Canada 102,541; Saudi Arabia 73,243; Poland 64,472.
Colloidal, precipitated, sublimed	1,215	1,325	--	West Germany 830; Yugoslavia 271; France 174.
Dioxide	(3)	25	--	West Germany 18; Austria 6.
Sulfuric acid	29,870	28,269	27	Spain 15,546; Yugoslavia 6,008; Austria 5,145.
Talc, steatite, soapstone, pyrophyllite	24,963	28,464	60	Austria 15,546; France 5,154; Spain 2,252.
Vermiculite, perlite, chlorite	40,996	33,489	--	U.S.S.R. 11,292; Greece 10,147; Republic of South Africa 7,722.
Other:				
Crude	34,133	46,494	1,946	U.S.S.R. 13,287; Spain 10,144; West Germany 5,818.
Slag and dross, not metal-bearing	7,269	8,091	--	France 2,042; West Germany 1,753; Switzerland 1,416.

See footnotes at end of table.

Table 3.—Italy: Imports of mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Commodity	1985	1986	Destinations, 1986	
			United States	Other (principal)
MINERAL FUELS AND RELATED MATERIALS				
Asphalt and bitumen, natural	1,059	795	608	West Germany 186.
Carbon:				
Carbon black	11,024	6,476	147	Netherlands 1,543; United Kingdom 899; U.S.S.R. 689.
Gas carbon	20,129	17,898	840	France 10,268; West Germany 3,592; Netherlands 1,024.
Coal:				
Anthracite thousand tons	674	884	302	Republic of South Africa 489; U.S.S.R. 49.
Bituminous do.	20,125	19,063	8,910	Republic of South Africa 4,962; Australia 2,068.
Briquets of anthracite and bituminous coal do.	71	239	—	Republic of South Africa 115; Colombia 114; France 2.
Lignite including briquets do.	148	59	(2)	West Germany 50; East Germany 5; Yugoslavia 4.
Coke and semicoke do.	135	154	10	France 66; West Germany 39; Belgium-Luxembourg 16.
Gas, natural: Gaseous million cubic feet	751,707	760,560	—	Algeria 306,775; U.S.S.R. 297,373; Netherlands 155,611.
Peat including briquets and litter	140,589	180,023	82	West Germany 120,760; U.S.S.R. 26,495; Netherlands 18,066.
Petroleum:				
Crude thousand 42-gallon barrels	480,662	533,926	—	Saudi Arabia 111,424; Libya 107,965; U.S.S.R. 50,076.
Refinery products:				
Liquefied petroleum gas do.	19,670	NA		
Gasoline do.	24,609	23,257	37	Kuwait 4,165; Libya 3,251; Yugoslavia 2,270.
Mineral jelly and wax do.	369	246	5	Hungary 60; West Germany 55; Netherlands 22.
Kerosene and jet fuel do.	529	1,889	3	West Germany 798; Libya 432; Turkey 170.
Distillate fuel oil do.	47,242	37,049	(2)	Romania 13,375; Kuwait 5,321; Algeria 5,263.
Lubricants do.	877	1,221	21	France 348; Greece 228; West Germany 174.
Residual fuel oil do.	129,204	124,435	—	U.S.S.R. 23,052; Kuwait 21,446; Saudi Arabia 9,426.
Bitumen and other residues do.	2,359	2,174	1,481	Spain 329; Yugoslavia 198.
Bituminous mixtures do.	12	14	1	France 9; Sweden 2; United Kingdom 1.
Petroleum coke do.	13,187	13,656	12,126	U.S.S.R. 649; United Kingdom 334.

NA Not available.
[1]Table prepared by Jozef Plachy.
[2]Less than 1/2 unit.

COMMODITY REVIEW

METALS

Copper.—The Italian metal group Società Metallurgica Italiana (SMI), and Pechiney, the French metals conglomerate, agreed to merge their copper-processing activities into a joint company named Europeene de Metallurgie. Under the mechanics of the merger, Trafilerie e Laminatoi di Metalli (TLM), owned 60% by Pechiney, was the hub of the transaction. Specifically, SMI acquired 30% of TLM's capital from Pechiney. TLM then absorbed Pechiney's French copper subsidiary Trefimetaux and SMI's copper subsidiary La Metalli Industriale (LMI), of which SMI was a 57% shareholder. Upon completion of the deal, Pechiney and SMI retained 51% of TLM capital, with SMI holding a greater share. The accord also provided that, although daily operations would be controlled by SMI, strategic decisions would be made jointly. It was expected that the added capital strength of the new company would allow the enterprise to

focus on production and sales aimed at growth areas such as electronics and telecommunications. Moreover, its output could amount to 20% of the European market, making it Europe's leading copper processor.

Ferroalloys.—Indel, the Italian silicon metal and ferrosilicon producer, acquired a majority stake in Società Italiana per il Magnesio e Leghe di Magnesio (IMLM). Previously owned by the Sacchariferous Montesi Group, IMLM planned to concentrate its activities on the production of ferromagnesium alloys for automobile and construction applications.

Iron and Steel.—Finanziaria Siderugica S.p.A. (Finsider), Italy's Government-owned steelmaker, lost $1.4 billion over the 18-month period that ended in September 1987. Reasons for the loss included a reduction in selling prices of 15% to 25%, an 11% rise in imports, and a concomitant reduction in domestic steel demand. Particularly noteworthy was the 30% decline in demand by the oil market for drill pipe manufactured by Dalmine S.p.A., a Finsider subsidiary.

A major consequence of the Finsider's financial losses was a reduction in the equity component of the company's capital structure. In addition, Finsider reportedly planned to cut allocations to its long-products division, New Deltasider, by $156.5 million; to its weldless pipe division, Dalmine, by $54.8 million; and to its stainless and magnetic steel division, Terni, by $46.9 million. The steelmaker also sought to reduce its work force by 22,000 by eliminating 4,500 jobs at its Taranto coil plant, and by closing its steel mill at Bagnoli, 120 kilometers northwest of Naples.

The EEC Commission approved a joint venture of public- and private-sector steelmakers to produce semimanufactures at the former Italsider Cornigliano works in Genoa. Mechanics of the joint venture involved the transfer of majority ownership of the Cornigliano operating company, Cogea, from Italsider to the private sector-firms, Bellicini, Leali, Luccini, Regis, Riva, and Sassone. In the process, those companies scrapped their raw steelmaking plants and their combined annual capacity of 2.22 million tons. They planned to take their supply of semimanufactures from Cogea, with a view toward meeting the EEC annual capacity goal of 1.4 million tons. Each of Cogea's owners was to take blooms and billets proportionate to the following ownership shares: Leali, 22%; Riva, 17.2%; Dalmine, 14%; Italsider, 12.4%; Regis, 11.5%; Lucchini, 9.3%; Deltasider, 6%; Sassone, 5.8%; and Bellicini, 1.8%.

FIT Ferrotubi requested written bids from prospective buyers to acquire its seamless pipe works at Sestri Levante and its smelting and continuous casting operations at Riva Trigoso. Prominent among the prospective suitors was the Marcegaglia group, which put forth a plan to restart production of FIT's works. Specifically, the Sestri Levante works was to be opened, repaired, and renovated. Work on Riva Trigoso was scheduled to commence later. In the interim, Marcegaglia undertook a study to determine the manner in which the acquisition would proceed, based on expected capital outlays and production efficiencies.

Lead.—SAMIM's Kivcet lead smelter at Porto Vesme, Sardinia, commenced operations. The smelter was scheduled to produce lead bullion at its capacity of 80,000 tons per year from 125,000 tons of lead concentrate purchased from European, South African, North American, and Peruvian sources. The Kivcet plant added annual capacity of 105,000 tons of lead to SAMIM's Sardinian operation. It was the last step in the company's reorganization of its production operations in the Porto Vesme area.

Zinc.—In 1987, Petrosula Sud, owned 51% by France's Penarroya, and 49% by the Italian state-owned company, lost $46.9 million on revenues of $95 million. Consequently, it was contemplating suspension of payments to creditors. Although the company's output of 100,550 tons of zinc reflected production at levels over capacity, its operating costs were prohibitively high as a result of obsolete equipment. Petrosula planned to modernize the plant with a view toward greater cost efficiencies, but its capital was insufficient to permit the necessary investment of $78.2 million. The situation was further complicated by the need for an additional $39.1 million to support sales. Moreover, Penarroya reportedly was not prepared to make the capital outlays necessary for renovation. The French company was seeking to sell its interest to another party. Closure of the facility was expected to result in the loss of 1,000 jobs because of smelter overcapacity in Western Europe.

INDUSTRIAL MINERALS

Cement.—Iri-Finsider, the Italian-state steel group was selling its 51% share in

Cementerie del Tirrano SPA (Cementir) reportedly for $142.5 million to Colacem. The sum reflects the asset value of the company's six cement works. Cementir made a net profit of $23.7 million on revenues of $195.7 million. Annual output from Cementir amounted to 1.4 million tons of portland cement, 1.14 tons of blast furnace cement, and 1.34 tons of portland slag and pozzolanic cement combined.

Italcementi, the largest of Italy's 50 cement producers, announced profits of $83.1 million during the first half of 1987, a 29% increase over the same period in 1986. Its market share in Italy accounted for 35.7% of the whole. The increases reflected a 43% rise in domestic demand for cement; demand by concrete manufacturers rose 38.7%, and demand by the construction and manufacturing industries rose 33.1%. The increased sales benefited the producing regions of Lombardy, Sicily, Veneto, Puglia, and Piemonte, with output tonnages of 4.7 million, 3.7 million, 3.0 million, 2.7 million, and 2.6 million, respectively.

Fluorspar.—The Gennas Tres Montis and Muscadroxia Mines, owned by Mineraria Silius, produced 78,300 tons of acid-grade fluorspar from crude ore extracted, representing more than 90% of national production. Minerararia Silius undertook a reorganization plan that was expected to cut costs with new equipment that would permit higher output per hour from the company's human and material resources.

Sulfur.—A pilot plant for the EEC's Inspira Mark 13 desulfurization process was being constructed at the Saras refinery in Sarroch, Sardinia. The installation had a nominal flue gas capacity of 32,000 cubic meters per hour and a concentrated sulfuric acid production capacity of 5 tons per day. The process was a result of development work undertaken at the EEC's Joint Research Center in Ispra near Milan. Ferlini Technology was the prime contractor but process design, construction and startup supervision were subcontracted to Kraftlanglogen Heidelberg. The 2-year test was to begin in early 1988.

Talc.—About one-half of the Italian output of talc was mined by Talco e Grafite Val Chisone S.p.A., which operated two underground mines at Fontane in the western Alps and Orani in Sardinia. The western Alps deposits, 65 kilometers northwest of Pinerolo, were formed by hydrothermal alteration and low metamorphic replacement of dolomite set in gneisses and mica schists. The talc occurred as veins running underground at depths between 200 and 500 meters.

The ore was mined in horizontal descending strips to ensure that only high-purity material was extracted. It was also handsorted at the surface. Annual mining capacity was 45,000 tons. The mined material was transported 35 kilometers to two milling plants on the Chisone River near Pinerolo. The ore was crushed, screened to 12 millimeters, and dried in rotary kilns before final grinding.

Much of the material was pulverized in high-speed vertical mills to produce grades with a particle size of 30, 20, and 10 micrometers. Total annual capacity of the grinding plant was 80,000 tons.

Industria Mineraria Italiana modernized its talc operations. Reportedly, the company increased the annual output of its Pra Mosia Mine to between 85,000 and 90,000 tons. In addition, it modernized machinery and planned to increase production of pulverized talcs at its Torre Santa Maria plant, where annual capacity was 60,000 tons. The bulk of the 45,000 tons of talc produced in 1987 was sold to the paper, paint, plastics, and rubber industries. Forty percent of that output was exported to Austria, France, the Federal Republic of Germany, and Switzerland.

Zeolite.—Industria Chimica Carlo Laviosa S.p.A. and Rhône-Poulenc Chimica S.p.A. established a joint-venture company, Laviosa Rhône-Poulenc S.p.A., to construct a synthetic zeolite plant near the new company's headquarters at Leghorn on the west coast of Italy. Capital outlays for the venture were said to amount to $3.1 million. Annual output for the new plant was expected to be 30,000 tons of detergent-grade zeolite A, targeted primarily to Italy's domestic market. Operations were scheduled to begin in spring 1988.

MINERAL FUELS

Coal.—It was expected that output at Ente Nazionale Elettrica's (ENEL) Santa Barbara Mine in Tuscany, the Pietrafitta Mine in Umbria, and the company's other open pit lignite mines would increase with increases in coal usage projected by ENEL. The company's study estimated ENEL's coal use would increase from 10 million metric tons to 25 million metric tons by 1995. With a national referendum not to proceed with nuclear-powered electricity plants, ENEL planned to construct coal-

powered plants between 1991 and 1995 at Brindisi Sud, Gioia Tauro, Pietrafitta, and Tarazzano.

Petroleum.—AGIP signed an agreement with Algeria's Société Nationale pour la Recherche, la Production, le Transport, la Transformation et la Commercialisation des Hydrocarbures (SONATRACH) to develop the Rom Oilfield, discovered by AGIP in the Sahara Desert, 200 kilometers from the Tunisian border and 700 kilometers from the Mediterranean coast.

The agreement pertained to Block 400 of the Rom Oilfield and stipulated that AGIP would recover, via production, 100% of the exploration costs incurred to the time of the agreement. Reportedly, AGIP also would begin drilling a second well in March 1988 and would explore the untapped areas of Block 403 to determine the presence of other deposits. Investments related to developing the deposit were to be made by both partners in a joint venture formed by AGIP and SONATRACH.

Production at Block 400 was scheduled to begin in 1990, and was expected to reach 30,000 barrels per day. Output from the deposit, situated at a depth of 3,300 meters, was to be transported to the Algerian coast by SONATRACH.

Saipem S.p.A., a subsidiary of Italy's ENI group, entered into a joint venture with the British firm of Brown and Root Inc., each with a 50% interest, to form a new corporation, European Marina Contractors (EMC) for the purpose of installing and marketing gas and oil pipelines in the North Sea. The new enterprise planned to limit its client base to northern Europe, principally the British Isles and Scandinavia. EMC had secured contracts to lay 60 kilometers of pipeline in the North Sea for Amerada Hess Corp., valued at $13.7 million, and an additional 55 kilometers for Shell Tern-Eider, a Royal Dutch/Shell subsidiary, valued at $12.5 million EMC was then expected to be a major player in two major projects between 1989 and 1992: the new system for undersea transport of British natural gas, and the construction of 1,000-kilometer natural-gas maxipipeline that will carry methane from Norway's offshore fields to continental Europe.

[1]Physical scientist, Division of International Minerals.

[2]Where necessary, values have been converted from Italian lira (Lit) to U.S. dollars, at the rate of Lit1,277 = US$1.00, the average rate in 1987.

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